SPECIAL REPORT: The Distributed Connection: DCE *page 28*

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DATAMATION

FOR MANAGERS OF INFORMATION TECHNOLOGY WORLDWIDE

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Larry Moore, VP and GM of Communications Products Division, Lotus Development Corp., with Lotus Notes

IS Puts Notes To The Test

page 24

Choosing The Right Windows Tool *page 35*

How To Minimize Upgrade Hassles *page 38*

LAN Backup Software Gets Smarter *page 47*

Using CASE To Rebuild Software *page 51*

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Human Resource Software *page 71*

AUGUST 1, 1991

DATAMATION

FOR MANAGERS OF INFORMATION TECHNOLOGY WORLDWIDE

VOLUME 37
NUMBER 15

Lotus Notes: A combination document creator, database generator and messaging platform.

COVER STORY

GROUPWARE

IS Puts Notes To The Test 24

BY MARK SCHLACK At more than 80 companies, IS managers are finding out if Notes is the software that will do for teamwork and group communications what spreadsheets did for accountants.

Cover photography by Dave Bradley

SPECIAL REPORT

OPEN SYSTEMS

The Distributed Connection: DCE 28

BY J. WILLIAM SEMICH
Starting next month *open* won't just equal *UNIX* anymore. Thank IBM and all the other proprietary vendors for building the Open Software Foundation's Distributed Computing Environment technology into their products.

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Transactions On The Desktop 67

BY ELIZABETH LINDHOLM Digital Equipment Corp. is out to redefine transaction processing. The benefits for IS managers are speed, an easy growth path and access from the desktop.

Digital's Roberson has an API for desktop transaction-processing programs.

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WINDOWS 3.0

Choosing The Right Windows Tool 35

BY PAUL PINELLA A growing array of Windows 3.0 development tools are paving the way for a new generation of in-house applications. But for corporate developers, picking the right tool for the right job is no simple task.

NETWORK APPLICATIONS

How To Minimize Upgrade Hassles 38

BY BOB FRANCIS Tired of updating hundreds of PCs for every new software upgrade, many companies are using their LANs to centralize software distribution. But some decentralized firms remain cool to the idea.

NETWORKS

OPERATING SYSTEMS

What's New In Low-Cost LANs 43

BY MARK SCHLACK Inexpensive LANs offer basic print and file sharing capabilities for small work groups and branch offices where enterprise networks can't be justified or supported. But there are some gotchas.

STORAGE

LAN Backup Software Gets Smarter 47

BY TOM McCUSKER A new round of tape drive software lets IS automate and control the backup, maintenance and retrieval of LAN data. Gone are the days when backup depended on end-user diligence.

SOFTWARE

SERVICES

Using CASE To Rebuild Software 51

BY NED SNELL Software services consultants are peddling their reengineering skills and toolsets as a quick and easy way for IS shops to rebuild their aging applications into new CASE packages.

STANDARDS

Unicode Breaks The ASCII Barrier 55

BY JOHN R. VACCA ASCII looked great in the '60s, but it's just an ugly American in the global '90s. Now Aldus, Apple, IBM, Microsoft and Xerox are trying to replace ASCII with Unicode—the code of a thousand character sets.

SYSTEMS

UPS

The Uninterruptible Power Problem 59

BY JEFF MOAD Even elaborate data centers equipped with the latest uninterruptible power supplies may not be safe from all power outages. The solution is surprisingly simple, but few vendors are rushing to supply it.

MAINFRAME STORAGE

Paying The Price For Better Storage 63

BY JEFF MOAD Managers with large storage needs are finding IBM's DASD prices are no bargain. And, with PCMs dropping out of the 3390-compatible market, IBM has few reasons to lower its prices.

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RAD For OS/2

Networks
Sniffing Out Network Problems

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Graphics Power For Power Users

Systems
More MIPS For Less

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OSF's Gossells: DCE makes a multivendor network appear as a stand-alone computer. page 28

American Airlines's Pendleton expects simplified software distribution once LANs connect the company. page 38

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LAN Backup Software Gets Smarter

A new round of tape drive software lets IS automate and control the backup, maintenance and retrieval of LAN data. Gone are the days when backup depended on end-user diligence.

BY TOM McCUSKER

Backing up local area network data used to be a dreary chore that got done if you thought of it. "If backup was in the closet, and if the person in charge of backing up data physically had to go in there and mount a tape and turn the drive on, he didn't always do it," says Michael Peterson, president of Peripheral Strategies Inc., a Santa Barbara, Calif., consulting firm that follows LAN backup trends.

Now, using the newest tape backup software for IBM and compatible PCs, IS managers can leave the tape drive in the closet and let it work unattended. Or, more likely, they can put the tape drive on the server in the data center and make LAN backup part of routine operations. Due to more mature hardware and software, LAN backup systems are finally becoming data management systems, with attendant scheduling, grooming, archiving and retrieval capabilities.

Several products are already available, and a flood of new ones will be hitting the market over the next six months. Some software comes packaged with tape drives, but may also be available on its own. Several software vendors are broadly selling their products entirely unbundled from tape drives. In all cases, the backup software will work with any brand of tape drive for which the software vendor has written a driver.

More powerful backup software couldn't come at a better time.

"Humans can't manage gigabytes of data and millions of files," says Peterson in explaining the rapid growth of tape backup hardware and software. "It's not unusual in a 1,000-node network to find a person spending half their time dedicated to doing single file restores and managing disks capacity problems."

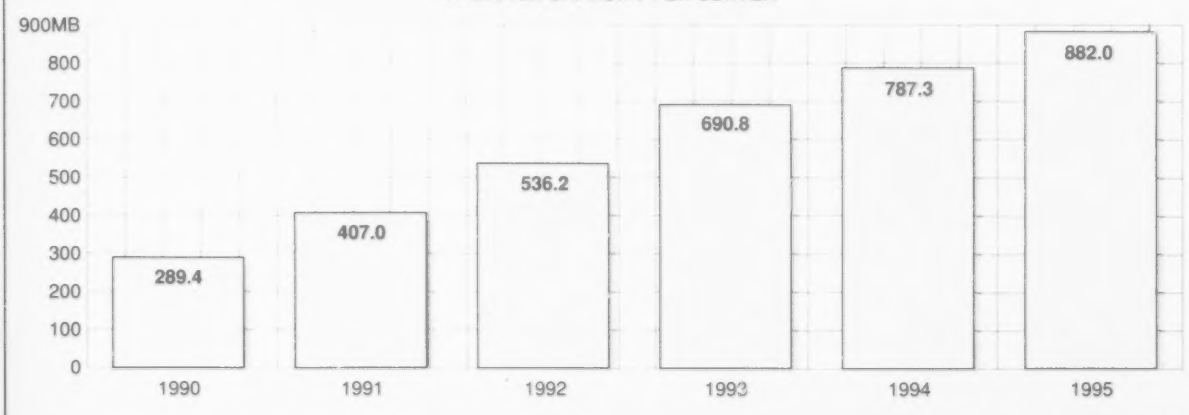
"It's even worse on engineering workstations, where a user could have several gigabytes on his desk," says Charles J. Holland, vice president of marketing at Epoch Systems Inc., a Westborough, Mass., supplier of backup subsystems for UNIX-based networks.

At Your Server

That's why it's not surprising that growth in the LAN backup market is accelerating. Peripheral Strategies estimates that, based on end-user prices, the LAN backup market will grow this year by half a billion dollars, or almost 40%, to $1.8 billion. It grew by $200 million,

How LAN Storage Is Growing

Between 1990 and 1995, average capacity per server will nearly triple to 882MB, while the actual number of servers per network will more than double to 4.2.



Source: Peripheral Strategies Inc.

Selected PC Tape Drive Software Vendors

The following companies are among the leading vendors of software for server-based tape drives on PC LANs.

Cheyenne Software Inc.
Roslyn, N.Y.

ARCserve. An automated, centralized backup/restoration product that enables uninterrupted, unattended backup services for both file servers and workstations. Price is $1,195 for NetWare 286 and $1,895 for NetWare 386. **Circle 350**

Emerald Systems Corp.
San Diego

EMQ. Server-based product supporting Microsoft's LAN Manager; priced at $795. **Circle 351**

EMQ NLM. Priced at $1,195; runs on Novell NetWare products. **Circle 352**

EMSAVE and **EMLIB**. Backup and restoration utilities for multiple servers; priced at $395 each. **Circle 353**

Scheduler. An entry-level product for unattended, scheduled backup of files on Novell networks. Software also supports Hewlett-Packard and Compaq systems. Priced at $1,295. **Circle 354**

Irwin Magnetic Systems Inc.
Ann Arbor, Mich.

EzArc. Based on Cheyenne Software's ARCnet product, provides backup on Novell LANs. Priced at $249 for five users or $999 for 100 users on NetWare 286 and $1,195 to $2,995 for 250 users on NetWare 386. **Circle 355**

Maynard Electronics Inc.
Lake Mary, Fla.

MaynStream and **LANStream**. Back up for Novell NetWare and OS/2 LAN Manager servers. Both are bundled with Maynard tape drives. **Circle 356**

Mountain Network Solutions Inc.
Campbell, Calif.

FileSafe and **FileTalk**. Server backup software, bundled with the company's tape drives. FileTalk ($495) runs on workstations and enables the backup functions to be automated and establishes peer-to-peer connections. **Circle 357**

Palindrome Corp.
Naperville, Ill.

Network Archivist. Manages the whole tape backup process, removing decision making from the users. It performs tape rotation and scheduling and provides self-maintenance. Relational databases are used to track files. Base level is 360MB, priced at $695; 1.3GB is $995. **Circle 358**

Sytron Corp.,
Westborough, Mass.

Sytos Plus. Backup and restoration utility. Price is $225 for a DOS version and $295 for OS/2. In the DOS version, the software is resident on workstations; it can be both server and workstation based under OS/2. In a server-based configuration, single and multiple servers, as well as workstations with peer-to-peer services installed, can be backed up. **Circle 359**

Tecmar Inc.
Solon, Ohio

ProServ. This is a component of Tecmar's ProLine network backup subsystem for Novell's NetWare 386 and later products. ProServ is Cheyenne's ARCserv product optimized for Tecmar's hardware and, like the Cheyenne product, runs as both a Value Added Process (VAP) and Network Loadable Module (NLM) on NetWare products. ProServ VAP version is priced at $995; its NLM product is priced at $1,695. **Circle 360**

Source: DATAMATION, company reports. Circle numbers appear on Reader card.

just over 18%, last year.

The improvements in backup software complement the growing strength of LAN tape backup hardware. Tape drives can now handle up to 5 gigabytes. And on the restoration side, recent hardware innovations have vastly improved the recovery rate for files. For example, Exabyte Corp.'s model 8200 and 8500 8-millimeter tape drives, introduced last year, were designed to provide an eightfold reduction in access time, from 8 minutes to 68 seconds.

With tape-drive hardware gaining industrial strength capacity and performance, software that once supported workstation backup needed to be retooled as server-based backup products to take advantage of the edge in transfer speeds. Hardware suppliers who offered workstation-based backup software found themselves suddenly having to "go back to the drawing board to provide server-based products," says Gene Della Tore, backup products manager with Tecmar Inc. Some companies, including Tecmar and Irwin Magnetic Systems Inc., opted to jump into the server market right away by acquiring the rights to sell a server-based software product made by Cheyenne Software Inc. called ARCserve.

But, from a features point of view, analyst Peterson ranks Palindrome Corp. as the leader in network data management software products. Palindrome was among the first to offer what vendors call intelligent backup, with a systems storage management product called The Network Archivist, introduced in late 1988. Intelligent backup automatically keeps track of when the data have been backed up last, how secure they were and how frequently they were changed.

The idea behind intelligent backup is that "people press one button, and they're able to do a backup," explains Nancy Harbin, manager of product planning at Irwin Magnetics. "They don't have to specify what's being backed up. It's done intelligently for them."

Intelligent backup may not be for everybody. Some IS managers have complained that the no-brainer approach robs them of the flexibility they would like in deciding which files are backed up and at what frequency.

The majority of software products for the network data backup market address Novell NetWare drives. But products that address other operating systems are also surfacing.

"Corporate America is not just Novell networks anymore," says Dan Stromska, product manager with Mountain Network Solutions Inc. The firm's new DMS software line will enable LAN administrators to manage data across multiple operating and network environments. "We're talking of a product that will run under Microsoft Corp.'s LAN Manager, Apple Computer's Appletalk and UNIX NFS-based networks," Stromska says.

Not Just NetWare

Peterson, at Peripheral Strategies, says that when the DMS products become available this summer and fall, they may shoot Mountain to the top of the list of backup software vendors. However, he does expect companies like Cheyenne and Palindrome to respond with competitive products. Cheyenne, for example, is scheduled to support Macintosh and NFS UNIX clients attached to a NetWare server in a fall release of ARCserve.

Sytron Corp., in Westborough, Mass., is also increasing the range of platforms that its widely used Sytos Plus software runs on. Right now, it works on standalone DOS and OS/2 machines, as well as on LAN Manager servers. It can be used for workstation-based tape backup on NetWare networks. By the end of next year, there will be a Network Loadable Module (NLM) version for NetWare 386 servers, says Stephen Gentile, Sytron's marketing manager.

Maynard Electronics Inc. is addressing local limitations of tape backup on NetWare LANs with a new feature of its MaynStream software. It will gain the ability to log in and out unattended on an unlimited number of servers. (NetWare allows you to log into only eight servers at a time.) The new feature will give MaynStream a wide area network capability. LANStream, a new client/server implementation, lets users treat the tape drive as a shared device.

Perhaps the future direction of PC LAN backup can be gleaned from the news that Epoch Systems hopes to port its UNIX backup and archival technology down to PC-based systems within a year or two. Epoch's systems automatically back up hard drives to tape and then move files that have been inactive for a set period of time to optical storage jukeboxes. The systems handle 20 gigabytes to 1 terabyte of data. Such a product would bring a new level of sophistication and power to PC LANs.

NEW PRODUCTS

A SELECTION OF RECENT INTRODUCTIONS

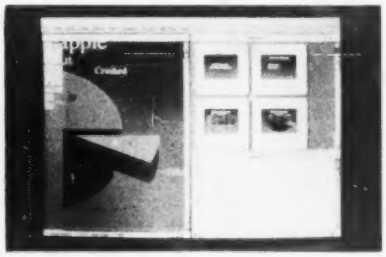
DATAMATION'S PRODUCT REVIEW

SOFTWARE

Harvard Graphics Does Windows

Version 3.0 of Harvard Graphics now supports Windows 3.0 and provides enhancements that give users more freedom to edit and embellish their charts.

Predefined layout regions for legends, titles and so on allow users to change chart attributes a section at a time rather than one line at a time. And users who are tired of the old X-Y bar charts can spruce them up with cylinder-, octagon- and pyramid-shaped bars. A spreadsheet view lets users select data without accessing a spreadsheet program. A WYSIWYG drawing option provides more than 35 drawing tools, and users can doodle or work through new ideas on a scratchpad without affecting the current image or chart on screen.



HARVARD GRAPHICS USERS can create three different working views of a chart

Version 3.0 requires at least a 286-based system with 438 kilobytes of free random access memory on a 640KB system; DOS 3.1 or later; a hard disk; and an EGA or VGA graphics card. The software retails for $595; current users can upgrade for $125. SOFTWARE PUBLISHING CORP., Mountain View, Calif.

Circle 530

A CASE For Integration

AD/Advantage, a full life cycle application development system, includes tools designed to simplify all phases of application development. It also helps ease the burden of cross life cycle activities like resource, documentation and change management.

Although AD/Advantage fits into IBM's AD/Cycle framework, it is based on an open architecture, enabling developers to port their applications to other platforms and use other sources for project specifications. The product integrates seamlessly with some upper CASE tools, including Intersolv Inc.'s Excelerator and KnowledgeWare Inc.'s IEW and ADW.

AD/Advantage runs on IBM mainframes under the MVS and VSE/CICS environments. It provides links to DOS and OS/2 development platforms, allowing IS managers to off load development chores from the mainframe. Prices range from $50,000 to $500,000. CINCOM SYSTEMS INC., Cincinnati.

Circle 531

Take Your Show On The Road

Business & Professional Software Inc.'s new 35mm Express/Laptop includes special features for laptop users who need to make presentations on the road.

The package includes integrated communications facilities that let the on-the-go presenter fax a presentation to a colleague for proofing or approval and send presentations to color-slide service bureaus via modem. The package also includes automatic layout, presentation management capabilities and support for 64 colors. Presentations appear in monochrome on an LCD display and print in color.

The $295 software runs on notebook, laptop and palmtop computers, and a version is available for Poqet computers, which use proprietary magnetic media. BUSINESS & PROFESSIONAL SOFTWARE INC., Cambridge, Mass.

Circle 532

PCs & WORKSTATIONS

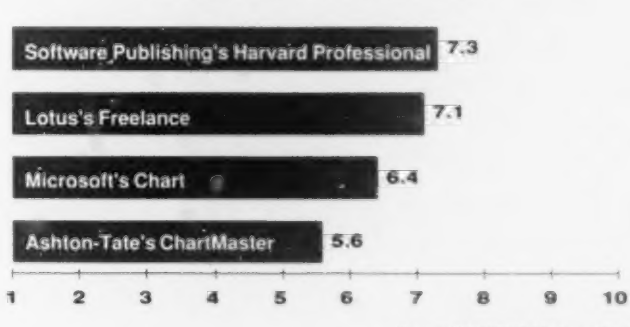
A Colorful UNIX Protégé

The Protege cf series from Mobius Computer Corp. include three workstations that bring color to the UNIX world at X-terminal prices, according to the vendor.

The top-of-the-line Mobius Protege

IS Satisfaction Scorecard: Graphics

DATAMATION surveyed IS managers who have purchased PC graphics software to determine their level of satisfaction. Owners of Harvard Professional Graphics and Lotus Freelance reported almost equal satisfaction with their purchases. ChartMaster and Microsoft Chart owners, however, are less satisfied.



Source: DATAMATION, December 1990

MARKET INSIGHTS

AN ANALYSIS OF ECONOMIC TRENDS

Oops! Our Forecast Was Too Rosy

BY MADELINE FRANCHI
Cahners Economics

A sudden weakness in the DATAMATION Information Systems Performance Indicator (ISPI) has put the lie to our forecast last month of an imminent upturn for the IS industry. We expected a steady rise in the indicator, which seemed to have turned upward in February, but it didn't happen that way. Final data in for April show that the ISPI inched downward to 95.52 that month—not up to the 96.73 we had estimated.

Although the difference may not seem that large, the important issue here is the word *downward*. The direction is wrong for a forecast of speedy recovery. That means an even slower recovery than the already slow expansion we had originally forecast.

What went wrong? New orders for information systems, which had been showing renewed gusto in January and February, reverted back to their old ways in April. In particular, computer makers suffered at the hands of shifting product demand and sliding prices. Orders for this portion of the information systems aggregate toppled 6.8% in April below the same period of 1990—a one-year loss not matched since February 1989.

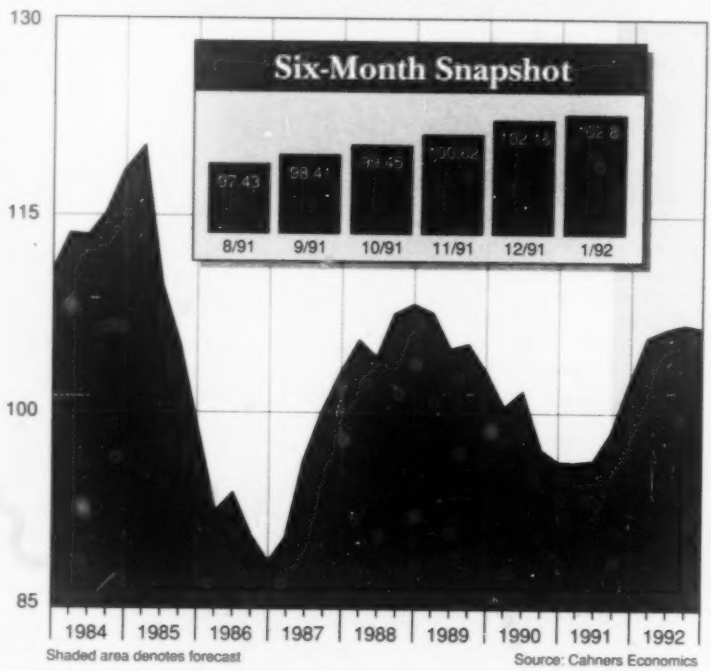
Stock market investors ran for cover when they discovered computer company profits heading for the tank, which pushed the Standard & Poor's computer systems stock price index down sharply in April and May, as a result. That index carries a lot of weight in the weighted average of factors that make up the ISPI.

Can the IS industry look forward to any good news? Yes, but it won't be visible to the naked eye until year's end. Growth in new orders for information systems is forecast to turn up in the third quarter. ▭

For more information on Cahners Economics's forecasting services, including seminars, newsletters and database diskettes, call Dan Buchan at (617)-630-2105, fax him at (617)-630-2100 or write to him at Cahners Economics, 275 Washington Street, Newton, MA 02158.

The IS Performance Indicator

Last month's forecast of strong improvement was a tad premature.



Shaded area denotes forecast

Source: Cahners Economics

	April 1990	March 1990	% Change 3/90-2/90	April 1989	% Change 1989/1990
■ Information-Processing Equipment					
Shipments (SA, $ billions)	9.34	9.33	0.0	9.39	-0.6
New Orders (SA, $ billions)	8.87	8.91	-0.5	9.42	-5.8
Unfilled Orders (SA, $ billions)	28.05	28.52	-1.6	27.19	3.2
Inventory (SA, $ billions)	16.17	16.03	0.9	17.43	-7.2
■ Computer Production Workers					
Employment (NSA, thousands)	267.4	269.7	-0.9	281.2	-4.9
Average Weekly Hours (monthly avg.)	39.8	40.2	-1.0	41.5	-4.1
■ Stock Index					
S&P's Computer Systems Stock Price Index	172.6	187.9	-8.1	192.0	-10.1
■ Contracts & Orders					
New Plant & Equipment (SA, $ billions)	33.4	37.3	-10.5	41.3	-19.0

SA= seasonally adjusted;
NSA= not seasonally adjusted

Source: U.S. Commerce Dept., Standard & Poor's; forecasts: Cahners Economics

NOTE: The U.S. Commerce Department revised all historical data on shipments, orders, inventory and unfilled orders. Therefore, you will notice revisions in the ISPI compared with previous issues of this magazine.

MARKET INSIGHTS

A SURVEY OF TECHNOLOGY TRENDS

MIS Leads In Business Redesign

BY WARREN CHILDS
Business Research Group

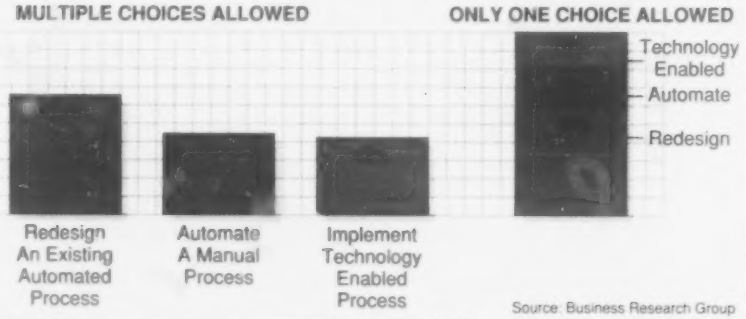
When businesses look for ways to reduce costs while maintaining or even improving the quality of their products, more often than not these days they are turning to MIS for the solutions.

The most recent survey of DATAMATION's Technology Panel shows MIS managers are being asked to use technology to change fundamentally the way their companies do business, to find less costly or more efficient ways to operate. Nearly all panel members (97%) are involved in developing new "business-critical" applications—that is, applications that directly contribute to a business's ability to generate revenue.

Panel members face three choices when deciding how to implement these new applications—redesign existing automated processes, automate processes that were previously manual or bring in new technology to create applications that enable a company to perform totally new business activities.

How MIS Targets Corporate Goals

MIS managers' preferred approaches to using information technology to help boost corporate efficiency and reduce costs.



Source: Business Research Group

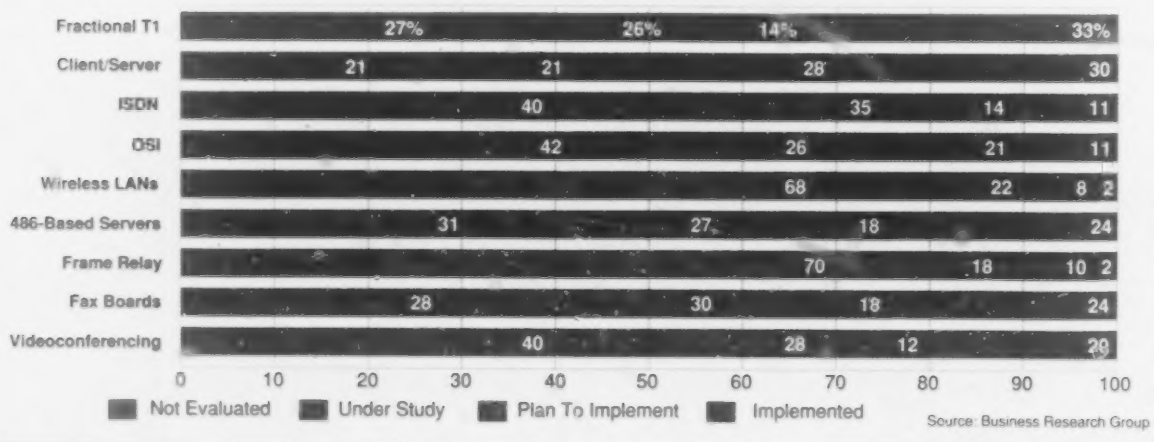
By far, the most widespread approach, mentioned by some 65% of those surveyed, is to redesign existing automated processes and procedures to make them more efficient. Take, for example, a customer service operation in which operators manually call up account files to their automated workstations. Several seconds per call can be saved by implementing computer-to-PBX links that send account files automatically to the operators based on information obtained electronically from the incoming call.

In order to implement new business-critical applications, 44% of panel members say they plan to automate previously manual processes and procedures. Another 42% say they expect to bring in totally new information technologies to help implement new business practices that wouldn't be feasible without these advanced applications. □

For more information, call Nancy Finn at (617)-964-6204, fax her at (617)-558-4402 or write to her at the Business Research Group, 275 Washington Street, Newton, MA 02158.

DATAMATION's Technology Implementation Index: Networks/Communications

DATAMATION each month surveys a select group of its readers--the DATAMATION Technology Panel--to investigate the implementation of new technologies by key user organizations


% OF RESPONSES
Fractional T1 27% 26% 14% 33%
Client/Server 21 21 28 30
ISDN 40 35 14 11
OSI 42 26 21 11
Wireless LANs 68 22 8 2
486-Based Servers 31 27 18 24
Frame Relay 70 18 10 2
Fax Boards 28 30 18 24
Videoconferencing 40 28 12 20
0 10 20 30 40 50 60 70 80 90 100
Not Evaluated
Under Study
Plan To Implement
Implemented

Source: Business Research Group

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